REMARKS

Status Of Application

Claims 1-4 and 6-19 are pending in the application; the status of the claims is as follows:

Claims 1, 6, and 15 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,926,159 to Matsuzaki et al ("Matsuzaki") in view of U.S. Patent No. 6,008,787 to Kondoh ("Kondoh").

Claims 2, 16, and 17 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki and Kondoh as applied to claim 1 above, and further in view of U.S. Patent No. 6,268,840 B1 to Huang ("Huang").

Claims 3 and 4 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki and Kondoh as applied to claim 1 above, and further in view of U.S. Patent No. 4,728,936 to Guscott et al ("Guscott").

Claims 7-9, 12, and 13 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki and Kondoh as applied to claim 1 above, and further in view of Japanese Publication No. (A) 8-035759 to Chikako ("Chikako").

Claims 10 and 11 are rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,952,990 to Inoue et al ("Inoue"), Matsuzaki, Kondoh and Chikako as applied to claims 1 or 7 above, and further in view of U.S. Patent No. 5,726,676 to Callahan, Jr. et al ("Callahan") and U.S. Patent No. 6,323,851 B1 to Nakanishi ("Nakanishi").

Claim 14 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki and Kondoh as applied to claim 1 above, and further in view of U.S. Patent No. 6,342,901 B1 to Adler et al ("Adler").

Claim 18 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of U.S. Patent No. 6,233,027 B1 to Unno et al ("Unno").

Claim 19 is rejected under 35 U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of U.S. Patent No. 6,085,047 to Taka ("Taka").

To date, no approval of the Letter to Official Draftsperson filed on February 14, 2003 has been received. Applicants respectfully request receipt of this document when it becomes available.

35 U.S.C. § 103(a) Rejections

As discussed at pages 1-2 of the present application, a liquid crystal display with a memory effect continues to display an image for an extended period without a need for the image to be refreshed at a high frame rate. However, external events and environmental factors may degrade the displayed image over a period of time. For example, touching an LCD display may cause the image to be distorted near the point where the display is touched, and relatively high ambient temperatures or strong light may cause a displayed image to fade over time. To counter the effects of these external events and environmental factors while achieving energy savings, the present invention contemplates a display system in which the display is refreshed in response to activity, e.g., user input, and also in response to an extended period of time since the last update.

Claims 1-4 and 6-19 stand rejected as being unpatentable over various combinations of Matsuzaki, Kondoh, Huang, Guscott, Chikako, Inoue, Callahan, Nakanishi, Adler, Unno, and Taka. To establish a prima facie case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the

references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, and not based on applicant's disclosure. MPEP § 2143 citing In re Vaeck, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). The rejection of claims 1-4 and 6-19 as being unpatentable over the proposed combinations of the cited art is respectfully traversed because the cited art fails to teach all of the claimed limitations.

With respect to claim 1 it is submitted that the suggested combination of Matsuzaki and Kondoh fail to teach all of the limitations of the claims at issue. Specifically, the references fail to teach or suggest a liquid crystal display with a memory effect wherein a displayed image is rewritten after a predetermined period of time has elapsed since the display was last updated. This feature of the invention is recited in the language of the claims. For example, amended claim 1 recites:

> "a timer for detecting time elapsing, the timer beginning counting when information displayed on the display section is updated;
> wherein the control section causes the driving section to rewrite currently displayed information on the display section upon the timer counting to a predetermined value corresponding to an predetermined period of time"

It is respectfully submitted that the cited art in general, and Matsuzaki and Kondoh in particular, fails to teach this feature of the invention. Indeed, both references teach away from this aspect of the invention in that the references are directed to increasing the refresh rate of an LCD display. Matsuzaki preferentially refreshes only those portions of a displayed image that have changed. Kondoh brings all pixels in a display to the same state and then rewrites all the pixels whenever any of the pixel data is changed. Neither reference suggests refreshing an LCD image at extended intervals.

The Office Action points to counters 28 and 29 in Matsuzaki as providing the requisite teaching. However, neither flag counter 28 nor refresh counter 29 as taught by Matsuzaki are timers in the sense that they track time elapsing nor do they begin counting when the display is updated. As described in Matsuzaki (see column 4, line 53 to column 5, line 7), refresh counter 29 provides a counter value to refresh address generator 30, which converts the value to a line address to be used for refreshing the frame. Flag counter 28 merely counts, or keeps track of, the number of partial rewrite operations. Neither refresh counter 29 nor flag counter 28 begin counting time when information displayed on the display section is updated. Kondoh and the other art of record fail to make up for this deficiency of Matsuzaki. Accordingly, it is respectfully requested that the rejections of claim 1 under U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of Kondoh, be reconsidered and withdrawn.

With respect to claim 2-4, and 6-14 it is respectfully submitted that these claims depend from claim 1 which distinguishes the cited art for the reasons provided above. Therefore, claims 2-4, 6014, and 19 are allowable over the cited art for at least the same reasons. Accordingly, it is respectfully requested that the rejections of claim 2-4, 6-14, and 19 under U.S.C. § 103(a) as being unpatentable over the various combinations of Matsuzaki, Kondoh, Huang, Guscott, Chikako, Inoue, Callahan, Nakanishi, Adler, Unno, and Taka be reconsidered and withdrawn.

With respect to claim 15, Matsuzaki and Kondoh fail to disclose, teach, or suggest "initializing a timer for detecting time elapsing when the information on the liquid crystal display is updated," and then "upon the timer reaching a predetermined value corresponding to a predetermined period of time, performing the steps of: resetting the liquid crystal display; and rewriting the information." The remaining art of record fails to supply the missing teachings. Accordingly, it is respectfully requested that the rejections of claim 1 under U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of Kondoh, be reconsidered and withdrawn.

With respect to claim 18, it is respectfully submitted that the proposed combination of Matsuzaki and Kondoh fails to teach all elements of the subject claim. Specifically, neither reference discloses, teaches, or suggests "a timer for detecting time elapsing, the timer beginning counting when information displayed on the display section is updated," or a control section, "wherein the control section causes the driving section to rewrite currently displayed information on the display section upon the timer counting to a predetermined value corresponding to a predetermined period of time." None of the other art of record provides the teachings missing from Matsuzaki and Kondoh. Accordingly, it is respectfully requested that the rejections of claim 1 under U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of Kondoh, be reconsidered and withdrawn.

With respect to claim 19, it is respectfully submitted that Taka fails to disclose, teach, or suggest "a manual operating member operable by a user; wherein the control section causes the driving section to rewrite currently displayed information on the display section upon operation of the manual operating member." Although, Taka discloses a structure which comprises a user to read a desired image from a memory, Taka fails to disclose an operating member for permitting a user to input a rewrite command that causes rewriting of a currently displayed image on the display section. Accordingly, it is respectfully requested that the rejections of claim 19 under U.S.C. § 103(a) as being unpatentable over Matsuzaki in view of Taka, be reconsidered and withdrawn..

CONCLUSION

Wherefore, in view of the foregoing amendments and remarks, this application is considered to be in condition for allowance, and an early reconsideration and a Notice of Allowance are earnestly solicited.

This Amendment does not increase the number of independent claims, but does increase the total number of claims by 5 from 18 to 23 (20 previously paid for), and does not present any multiple dependency claims. Accordingly, a Response Transmittal and Fee Authorization form authorizing the amount of $54.00 to be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260 is enclosed herewith in duplicate. However, if the Response Transmittal and Fee Authorization form is missing, insufficient, or otherwise inadequate, or if a fee, other than the issue fee, is required during the pendency of this application, please charge such fee to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260.

Any fee required by this document other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

If an extension of time is required to enable this document to be timely filed and there is no separate Petition for Extension of Time filed herewith, this document is to be construed as also constituting a Petition for Extension of Time Under 37 C.F.R. § 1.136(a) for a period of time sufficient to enable this document to be timely filed.

Any other fee required for such Petition for Extension of Time and any other fee required by this document pursuant to 37 C.F.R. §§ 1.16 and 1.17, other than the issue fee, and not submitted herewith should be charged to Sidley Austin Brown & Wood LLP's Deposit Account No. 18-1260. Any refund should be credited to the same account.

Respectfully submitted,

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